Quantifying the relationships between fracture characteristics and facies architecture: Mechanical stratigraphy of Paleozoic carbonate lower-slope deposits in the USA and Kazakhstan

**Project description:** Using outcropping carbonate sediment-gravity-flow deposits in two areas (Bolshoi-Karatau, Kazakhstan and Guadalupe/Apache/Sacramento Mountains, United States), this project will characterize the stratigraphic architecture, mechanical stratigraphy, and resultant fracture distribution in lower slope ‘apron’ settings. This data will help to understand how fracture characteristics (e.g., height, length, aperture, spacing, orientation) and evolution (i.e., timing, dissolution, cement fill) are correlated with lithofacies heterogeneity, depositional processes, and overall margin architecture/orientation, and will be applied to better parameterize reservoir models for the Tengiz and Korolev fields in Kazakhstan. The project is a partnership between Colorado School of Mines, Nazarbayev University, Tengizchevroil, and Chevron.

**Job description:** You will help collect, integrate, and synthesize macro- and micro-scale outcrop data from several outcrop localities, and help supervise 8-10 graduate students associated with the project.

**Salary and Start Date:** Two postdoc positions available – each at $60,000 per year for 2-3 years, depending on project scope. Start date is as soon as practical, and ideally by September 1, 2021. Location will be Golden, CO and/or Nur-Sultan, Kazakhstan.

**Preferred qualifications:** Ph.D. degree with experience in at least one of the following:

- carbonate sedimentology/stratigraphy
- sediment-gravity flow processes
- fracture characterization
- discrete fracture network (DFN) modeling
- data analysis in python
- field and outcrop experience

Contact Zane Jobe zanejobe@mines.edu for more details or to express interest!